

# **BEYOND THE NUMBERS**

## *Education Systems Building And the Use of the Career Major Concept*

By Richard Froeschle

The term “career major” has diverse connotations to different parties. In fact, the concept means something slightly different to educators and school personnel than it does to those in the economic and labor market information community. To add to the confusion, even within these respective constituencies one finds the interchangeable use of different terms to express the notion “aggregating broad fields of study relating to clusters of industries and occupations”; this being the definition of a ‘career major’ in the federal School To Work legislation. The bantering of terms which range from ‘career clusters’, ‘is enough to make even the most experienced bureaucrat cringe-not to mention the confusion thrust upon the teacher, planner, parent, or student.

The notion of a well-defined, and universally understood, career major offers ho to many of these groups. From a systems or capacity building perspective, the career major concept has relevance in many varied facets of creating an integrated education and workforce development system. A career majors construct, used in any one of these systems areas, can add clarity and purpose to the content. However, applying the same career major system across multiple functions creates the all-important synergy necessary to drive institutional reform, integrated information systems, and program effectiveness.

### **LABOR MARKET INFORMATION AND CAREER MAJORS**

The acronym ‘LMI’ has recently been used not just for labor market information but in reference to ‘Labor Market Intelligence’; a concept that has broad appeal and understanding to the private sector. Historically, a reference to labor market information has implied a narrow set of labor market employment statistics used to generally describe industrial and occupational composition and trends. In this context it is often isolated from workforce development program planning or operations. The use of the word ‘intelligence’ however, conjures up an entirely new perspective on employment-related statistics.

In the military arena, for example, a successful campaign is critically dependent on accurate and thorough information. Without detailed knowledge about enemy positions, weapon strengths, battlefield topography, etc., a military operation could suffer serious loss of life,. In the private business sector, the equivalent to ‘intelligence’ is market research. Market research gives a business enterprises critical information about consumer tastes and preferences, income levels and buying power of target audiences, competitor products and market segment price elasticities (how high can you price the product and maintain target unit sales), etc. without this type of information as a critical part of a business plan, most companies wouldn’t be in business for very long,. If this type of information about the external environment and the stakeholders is so important to the military and private sectors, why wouldn’t it be similarly critical to the operation of public sector activities such as education and workforce development? The answer, of course, is that it makes equal sense to build a regional workforce development strategy around information about the labor market, and to use that same information across many aspects of public education.

The notion of an integrated LMI system provides a useful context for the presentation of a career majors system which can be used pervasively to effect institutional reform. Consider the following applications in which a commonly defined system of career majors can facilitate educational articulation from secondary to

post-secondary to employment, drive meaningful career awareness and exploration for students, and advance efficient data collection, sharing and reporting for purposes of continuous program improvement.

## **LMI SYSTEMS BUILDING APPLICATIONS FOR CAREER MAJORS**

Again, if one considers a broader definition of labor market information, there are many LMI applications which can be improved through the use of the career major construct. This paper presents five unique, but highly interrelated, situations that could benefit from a comprehensive career majors framework.

A career majors system can serve as the clustering concept for reporting a 'family' of occupations at an aggregate level of detail. Traditionally, occupational information is collected and reported at a very detailed level. But many of these detailed occupations have significant similarities, especially in the content of preparatory instruction. It makes sense then to aggregate detailed information and report occupational characteristics, such as prevailing wages and employment outlook, at a higher level of detail, such as the career major or comparable grouping. LMI professionals have used similar concepts, such as the units of analysis originally developed by the NOICC, to cluster both demand information and data regarding the level of supply or available skilled workers. This aggregate concept is especially appealing in the reporting of occupational supply and demand because the underlying coding systems used to collect labor market demand information are fundamentally different from the way educators group instruction or course taking behavior (supply). A commonly understood career major system allows these disparate bodies to combine the data systems and generate useful data on job prospects for students and job seekers alike. Thus, the career major construct can serve as an additional focus of coordination between state Department of Labor representatives and STW educational liaisons.

Moreover, the new O\*NET Database, quietly replacing the Dictionary of Occupational Titles (DOT) as the defining occupational classification system in this country, is designed as a hierarchical structure which can be easily adapted to a career major system. In fact, the Texas SOICC has already piloted such a clustering system as a part of the OSCAR School To Careers information system funded by the Department of Labor's O\*NET office. The OSCAR software allows the user to engage myriad assessment and comparison functions resulting in a subset of detailed occupations matching student interests or preferences. Within the OSCAR program, each occupation has also been assigned to a career major and thus the user can quickly ascertain what similar occupations fall within the same major as their selected occupation. This creates an excellent link between assessment, labor market supply and demand information, and occupational characteristics information provided through O\*NET.

Lastly, the national labor market information system is awash in duplicative occupational coding systems that often have spurious relationships to each other. Most of these coding systems have been developed independently to assist the states in fulfilling multiple reporting requirements or compliance documentation. Although crosswalks or cross-reference tables have been meticulously constructed, moving from one coding system to the next at the detailed occupational level, by definition, is an imprecise exercise.

The career major concept can, however, lend a degree of stability to this process. Each of the federal occupational classification systems can be crosswalked to any state's career major system. As detailed information is collected to satisfy federal or state reporting purposes, it shared broadly with partner agencies and local for guidance and counseling, building a market-driven rationale for a course or program offering,

describing labor market trends for strategic planning, identifying the relationship or calculating the return on investment between occupationally-specific training and labor market outcomes, or facilitating articulation between the curricula taught at the secondary level with that proved at the postsecondary level (both of these latter uses are discussed in greater detail in a subsequent section of this paper). Much of the currently available labor market information is unused because there is no 'common currency' or contextual understanding to which it can be applied within any real-life scenario familiar to educators. A career major system can help bring labor market statistics, and the application of such data, into much closer alignment.

A second system building application for the career major concept is as the basis for the collection of skill standards information. The National Skills Standards Board (NSSB) created an entirely new coding taxonomy to describe the world of work and serve as a foundation for skills standards development. Unfortunately, this new national fifteen 'economic sectors' concept has virtually no relationship to any of the coding systems presently in use. This severely limits a state's ability to use the economic sectors concept as part of an integrated information system.

Think of the possibilities, however, if a state were able to use a commonly understood career majors system to not only integrate occupational supply and demand data and O\*NET occupational characteristics information, but to build a system of skill standards using that same career majors construct. The skills standards effort is about creating a comprehensive approach to identifying critical knowledges, skills and abilities in demand by employers and, in turn, using that information to shape education and workforce development programs and provide appropriately aligned instruction. At present, most states have a difficult time identifying information about employer skill needs, much less using it to drive postsecondary and second-chance programs. A primary reason for this misalignment is the lack of a common conceptual vocabulary within which to communicate.

The career major could be used to communicate cross-functional skills identified by employers, as cataloged under the SCANS initiative and within O\*NET, as a vehicle to modulate curriculum development and instruction at all levels of education. One can truly imagine a system where students are exposed to a variety of career majors at the secondary level with subsequent postsecondary curricula, shaped by employer input, reflecting the same consistent body of skill requirements. This would allow not only for skill standards information to make its way into postsecondary curriculum, but improve course articulation between secondary, postsecondary and employment.

In addition, many schools suffering from poor perceptions by employers regarding adequate student preparation have adopted a 'guarantee' program as a way to stand behind the quality of their education. To make this guarantee program work, schools must have a greater awareness of employer skills requirements and must begin workforce-related instruction earlier in the students educational career. The career major concept allows schools to build core competencies related to each major and verify through employers that these are indeed the competencies required. The school can then confidently stand behind graduates in any career major, knowing full well that the instruction imparted, assuming it was delivered through a solid, criterion-referenced curriculum, will match the expected outcomes.

The third area of great interest and concern to educators is that of career awareness, career guidance and career exploration. As discussed in the National Career Development Guidelines, career guidance in the earlier grades is primarily an introduction or awareness of the world of work. Even in the later grades career exploration is more about helping the student and their family understand a broader range of postsecondary

education and career options. The use of a career majors concept within the career guidance function is not about bringing a student to premature closure in their exploration process. It is about allowing a student to experience a more 'real life' feel for occupations within specified general clusters to help the student and her family make more informed choices when those key decision-making times occur. Because a student doesn't generally benefit by coming to closure in their career exploration process too quickly the career major in effect actually serves to keep more options open for the student. At the same time, students begin to learn the relevance of academic courses through their exposure to work-based experiences such as those detailed in the School To Work legislation. The career development theory in force here is that greater relevance leads to higher student motivation and subsequently to greater learning proficiency. The career major is an ideal vehicle to provide direction and relevance without drawing the student into premature closure.

A critical advantage to the career major within a guidance paradigm is helping to make career planning a more empirical or data-driven experience. Too much career decision-making takes place without a shred of labor market reality. If career majors are used to help students discover greater world of work relevance to their academic subjects, a state must make certain that labor market information is available for whatever career major construct is put in place. This is another area where the new O\*NET database will be useful, given the extensive information now available about occupational characteristics, educational preparation required, etc. there is nothing more confusing to a counselor, educator or especially a student than to try to put the 'square peg' of detailed occupational statistics into the 'round hole' of a career major. This data conversion process should be transparent to everyone except those who construct the data sets.

Another aspect of confusion within the career exploration process is the inconsistent use of occupational titles or categories even among the several state publication and automated career guidance tools. Labor market analysts know from experience that some users require occupational data at more detailed classifications than others. That does not preclude however, the consistent use of the same career clusters or majors across the many information tools that are routinely available to students. For example, imagine that a state has adopted a career majors system that encompasses eight (8) majors and thirty-five (35) career groups within those majors. Imagine also that a state produces a career information tabloid and has adopted an automated career information delivery system (CIDS) that is promoted for use by schools throughout the state. Lastly, imagine that the agency producing the tabloid has not adopted the state career majors system, nor has the vendor providing the automated CIDS. When the student begins to explore the world of work based on a career major she will have no idea how the career information being provided to her relates to her particular career major. Clearly, a case can be made for providing consistent occupational and labor market information to students and the career major is an excellent vehicle around which to convey that information. A great injustice is done if there is no consistency between the many publications and software packages used for assessment or exploration and the state career major system.

The fourth major application for a career majors system is that it can be used to facilitate better articulation between high schools, postsecondary education, and employers. Most states have adopted some integration, sequencing or articulation between these various levels under the guise of the federal Tech Prep initiative. A career major system can provide the basis for establishing articulation agreements across these several levels on three fronts.

Within a career major framework, each student within a major can be assured that competencies mastered at a previous level are not required again at each subsequent level, thus reducing course-taking duplication. Not only does this give the student the chance to master a greater number of competencies as a part

of the educational process, but limits the cost to the student by not requiring him to essentially repeat a course whose competencies he has already mastered.

This can only happen if, at each level within the articulation agreement, there is a common agreement regarding the core competencies and the standards against which student performance will be assessed. Although at the postsecondary level a student may concentrate at the career group or some detailed level below the career major, core competencies mastered within a career major, and for which mastery can be documented, need not be duplicated.

The value of using a career major system as part of educational articulation is particularly visible where the student population is mobile and where there are multiple postsecondary program options available to a student. If the core competencies of the career major are widely regarded, no matter whether the student moves to postsecondary education at a local institution or enrolls in a school across the state, the mastery of core concepts within a major should transfer at all statewide public institutions. Even for those students who do not complete a degree or certificate program (some of whom may be exiting as 'marketable skills achievers'), the employer community can still be assured that the student has mastered a core set of basic competencies that may qualify them for multiple entry-level jobs. For the student, this provides them with greater marketability and earnings potential despite, for whatever reason, not exiting with a degree or certificate. Thus, the career major system helps to assure consistent perhaps even across state consortium boundaries, across education levels, and for all classes of students.

The last systems building concept that can benefit from a career majors system is within the realm of student follow-up and performance accountability. Previously discussed was the concept of skills standards acquisition expenditure of public education dollars there must be a follow-up system which can document, for example, that what was learned by a student at the secondary level actually allowed the student to progress to additional postsecondary education or had direct relevance to employers. The career major system can be one vehicle to demonstrate public accountability to stakeholders both by (1) documenting training-related employment for those students entering the labor market, and (2) demonstrating that within the career majors framework a student can move to additional education and training with less duplication and at combined lower costs than had the student not taken courses within a major.

Recent findings from the wage record-based automated follow-up research conducted in Texas and Florida suggest that students who get jobs in their area of study are far more likely to get higher earnings of the job. It also overshadows any race/ethnic or gender bias and leads to greater satisfaction with the educational systems. It seems therefore, that a desirable social outcome would include an increased number of students who end up in jobs that are related to the education or training they receive. This type of program evaluation has been attempted in many ways, most of which include a survey of recent graduates asking them for a self-reported determination of whether they felt their education was a critical factor in securing a job. These surveys are imprecise at best, misleading at the worst, and expensive in either case. The states of Florida and Texas have had excellent success in determining training-relatedness using a combination of UI wage record based linkages and employer surveys.

In order to determine training relatedness there must be documentation regarding the type of instructional programs completed by the student. There is fairly uniform use of the Classification of Instructional Programs (CIP) codes to chronicle program enrollments and completions at the postsecondary level. However, at the secondary level many states do not even collect the individual student level data at the

state central education agency nor assign course-taking behavior based on a universally adopted classification system. In other states, there is one coding system used at the secondary level and another used at the postsecondary level with no relationship between the two. If one considers the ultimate articulation with employers, the scenario gets worse. Most firms have their own payroll titles or, at a minimum, are classifying jobs based on occupational classification systems which bear no resemblance to the taxonomies used by public education. Thus, the process of documenting training-related labor market outcomes is confounded on several levels.

The use of a well-articulated career major system can also help in this arena. To accomplish this task, regardless of the discontinuity of coding systems used at the various levels of articulation, each coding system must be crosswalked to the state career majors system. At the secondary level there must be some stable, documentable relationship established between courses taken or a vocational capstone experience and the career majors. At the labor market or employer level, there must be a relationship established between occupations (such as those used by the O\*NET), and the state career major system. Once again, the career major becomes the common currency. Regardless of the taxonomy employed by a state, if the capstone experience or program is classified under a career major system data collected for the purposes of follow-up can be linked back to the original course-taking behavior. The chart on the previous page provides a simple graphic demonstrating how O\*NET can serve as the common link between each of these functions and constituents.

Why not simply ignore the career major concept and use legacy coding systems to design program follow-up based on existing categories? The primary reason is the need to reasonably identify the degree of relatedness without too narrowly defining the occupational outcomes that can indeed be referred to as 'related.' Take the example of a diesel mechanic. A student receives a certificate 'related.' Take the example of a diesel mechanic. A student receives a certificate declaring that he had mastered the competencies related to diesel mechanics. They go forth seeking employment and find a job rebuilding motorcycle engines in a motorcycle retail store. Clearly, the student is using skills learned as part of his educational experience and thus, intuitively, one might classify this a training-related outcome. However, if you match at the detailed occupational level, a diesel mechanic is a different occupation than a motorcycle mechanic and thus this would not be, strictly speaking, a training-related outcome. Since the training program of diesel mechanics and the occupation of motorcycle mechanics would both logically fall within the same career major of Industrial and Mechanical Technologies, the career major concept allows these two areas to be deemed as related. Moreover, this determination would make sense at all intuitive levels. After all, follow-up data systems are commissioned to document outcomes for the purposes of continuous program improvement and not as Machiavellian exercises for punitive purposes.

Using this last example, wouldn't it be an outstanding example of the 'school to work experience' if the student had embarked in high school within the Industrial and Mechanical career major based on the career exploration process-having been exposed to related world of work experiences and having looked at the employment and earnings potential of occupations in this major. And, having taken high school courses within this major, opted to go to a regional community college where, to his took in high school counted toward his certificate program. Next, when our candidate completed his certificate, he was already aware of several possible employers since they had signed articulation agreements with this regional community college. This same employer had helped shape the curriculum and provided several of the mechanical diagnostic tools our student used in the classroom. Not to mention that when our example student got a job he was fairly happy since he received the pay and working conditions he expected based on the career information he had previously viewed. And finally, when accountability time came around for the several public education institutions

involved in education this student, the student could be counted as a training-related success story since the follow-up system used a career majors approach that could be equated back to the students course-taking behavior.

Although this scenario may not be reflective of the experiences of all students, it demonstrates the power of the career major concept when used within the context of a broad brush labor market intelligence system that is integrated a multiple levels. This scenario is not simply idealistic, but imminently practicable. Most of the technology, concepts, data and classification tools are already in place to turn this example into a fully-functioning integrated education and training delivery system. As this paper demonstrates, the career major concept is much more than a way to group occupations-it is potentially a cornerstone in the construction of a comprehensive education and workforce development system.

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